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ABSTRACT

In a 1991 Gallup poll, 6 percent of American adolescents admitted to suicide attempts. This follow-up study focused on the suicidal behavior before and after admission to a private psychiatric hospital of adolescent inpatients (N=25) who were part of an original sample of 150 inpatients. Compared to the non-respondent group, the respondent group included more females, had higher Beck Depression Inventory (BDI) scores, and more frequently reported suicidal ideation. Presence/absence of ideation and number of reported suicidal attempts per year decreased significantly between admission and follow-up 1-4 years later. There were no differences between depression scores, presence/absence of outpatient treatment, or numbers of admission before and after the index hospitalization. In repeated measures analysis of covariance, there was a significant effect for the covariate Beck Hopelessness Scale score, but not for admission ideation or for BDI score. No effects upon either numbers of admissions or of suicidal attempts were found in other repeated measures. No specific treatment effects were detected. Before these apparent changes in suicidal behavior (i.e., ideation and number of attempts per year) can be attributed to hospitalization, history and maturation effects must be ruled out. (Author/NB)

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Suicidal Behavior in Adolescent Ex-Inpatients: A Follow-Up Study

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Abstract

Twenty-five youths participated in a follow-up phase of a study of 150 adolescent inpatients; this study focused upon their suicidal behavior before and after admission to the Institute of Living, a private psychiatric hospital. Compared to the non-respondents, the respondent group included more females; on admission, it had higher Beck Depression Inventory (BDI) and Hamilton Rating Scale for Depression scores, and more frequently reported suicidal ideation. Presence/absence of ideation and number of reported suicidal attempts per year decreased significantly between admission and follow-up 1-4 years later. There were no differences between depression scores ($p = .0549$), presence/absence of outpatient treatment, or numbers of admissions before and after the index hospitalization. In a repeated measures analysis of covariance, there was a significant effect for the covariate Beck Hopelessness Scale score, but not for admission ideation or for BDI score. No effects upon either numbers of admissions or of suicidal attempts were found in other repeated measures. No specific treatment effects were detected. Before these apparent changes in suicidal behavior (i.e., ideation and number of attempts per year) can be attributed to hospitalization, history and maturation effects must be ruled out.

Suicidal Behavior in Adolescent Ex-Inpatients: A Follow-Up Study

This paper is a modified version of a presentation to the American Association of Suicidology's 24th Annual Conference, "Suicide, Coping and the Creative Process." Boston, Massachusetts: April 18, 1991.

In a recent Gallup (1991) poll, 6% of American adolescents admitted to suicidal attempts.

In two studies, it was found that 63.6% (Garber, et al., 1988) and 72.0% (Kovacs, et al., 1984) of depressed adolescents suffered from at least a second episode of major depression. Two follow-up studies have found that 46% and 50% of suicidal adolescents continued to attempt suicide after discharge from the hospital (Barter, Swaback, & Todd, 1968; Stanley & Barter, 1970).

The follow-up study we are going to present to you today is part of a study of depression and suicidal behavior among a group of adolescent inpatients. In order to detect change, comparisons were made between Beck Depression Inventory scores (Beck & Steer, 1987; Beck, et al., 1961) and histories of psychiatric treatment and of suicidal attempts and ideation reported at admission and post-discharge.

During the summer of 1990, this study was carried out by the Clinical Research Department of the Institute of Living a private

psychiatric hospital in Hartford, Connecticut. The authors would like to thank Dr. Patrick Hynes, Prue Anderson, John S. Wright, Dorothy Aldridge, Carmen Roldan and Carol Adoff for their assistance.

While there were 150 adolescent inpatients in the original sample, only 25 dischargees (or one-sixth of the sample) participated in this follow-up phase. Only 28 (22.4%) of the nonrespondents personally refused to participate. An additional 5 (4.0%) agreed to participate but did not complete the questionnaires. In 24 (19.2%) of the cases, parents refused or refused <u>for</u> their children; in an additional 18 (14.4%) cases (which are combined as part of "questionnaires not returned" in this slide) telephone contact was made with family members only. Nineteen (15.2%) youths could not be located; the most disturbing finding of this study was probably that in 9 (7.2%) cases family members did not know where their children were, and that in fact there might be additional instances of this status hidden in other categories. There were no suicides reported in the group; the one known death was attributed by parents to a motor vehicle accident.

Higher proportions of the respondents than of non-respondents were female and reported suicidal ideation at admission. Respondents also had higher scores on the depression instruments used in the first study: Beck Depression Inventory, Hamilton Rating Scale for Depression, and on the Depressive

Experiences Questionnaire dependency and self-criticism factors, but not on its efficacy factor.

The mean number of years at follow-up was 2.2, although the follow-up period ranged between 1 and 4 years. Cohen-Sandler, Berman, and King found in 1982 that adjustment at follow-up was not associated with length of time since the discharge of a sample of children and adolescents. In this study, number of years between admission and follow-up was not associated with demographics, with Beck Depression Inventory or Beck Hopelessness Scale scores at follow-up, or with treatment or suicidal ideation or attempts since discharge.

The mean age of the sample was 19.6 at follow-up; it had been 16.6 at admission. Four of every 5 participants were female, all were white, and 72.8% Protestant or Catholic. The most common DSM-III-R (American Psychiatric Association, 1987) primary or secondary discharge diagnoses, made by clinicians, were: dysthymia (11), borderline personality disorder (10), substance use (10), other personality disorders (8), and major depressive disorder (3).

The following admission/follow-up comparisons will be presented next: 1) Beck Depression Inventory scores, 2) history of suicidal ideation, 3) history of number of suicidal attempts, 4) history of outpatient psychiatric treatment, and 5) history of number of psychiatric hospitalizations. Each is reported at admission and (since discharge) at follow-up. Because of the

small size of the sample, nonparametric tests were utilized throughout (Siegel & Castellan, 1988).

Only 3 of the youths reported normal depression scores at admission, while 12 of them did so at follow-up. This difference in categories was not significant ($p = .0549$), however (Table 1). The mean depression score at admission was 21.5, at follow-up, 14.6. This difference was also nonsignificant (Wilcoxon $Z = -.96$, $n = 22$, $p = .34$). (Three admission depression scales were

- Place Table 1 about here -

not returned, so the number used in calculating this statistic was 22; the mean was 15.8). The median was 18.5 at admission, 10.0 at follow-up, while the mode was 12.0 at admission and 1.0 at follow-up. The admission standard deviation was 12.7, the follow-up standard deviation 13.0. The admission scores ranged between 2 and 48, the follow-up scores between 1 and 49.

The distribution of history of suicidal ideation at admission (in the initial study) and between discharge and follow-up were not symmetrical; the difference was significant (Table 2). Twenty-three of 24 adolescents reported

- Place Table 2 about here -

histories of ideation at admission, while only 16 of 24 youths admitted to ideation since discharge. Thus, there were 8 adolescents who initially reported suicidal ideation who did not report it after discharge.

When history of suicidal attempts was looked at in terms of whether or not adolescents reported attempts, the distributions were symmetrical ($p = .0956$); the difference was not significant (Table 3). Of the 14 adolescents who reported at least 1 attempt

- Place Table 3 about here -

before the index admission, 12 reported none after discharge. When suicidal attempts were looked at in terms of mean number of attempts per year, however, the difference between admission (1.11) and follow-up (0.18) was significant ($Z = -2.02$, $n = 24$, $p = .04$).

The distribution of whether or not the youths reported histories of outpatient psychiatric treatment before admission and after discharge was symmetrical; the difference was nonsignificant (Table 4). The mean number of admissions per year

- Place Table 4 about here -

before (0.45) and after (0.20) the index hospitalization were, also, not significantly different ($Z = -1.33$, $n = 23$, $p = .19$).

The Beck Hopelessness Scale was administered at follow-up only, so admission and follow-up hopelessness scores cannot be compared. It was possible, however, to incorporate the Beck Hopelessness Scale score in several repeated measures analyses of covariance. In the first repeated measures analysis ($n = 22$), whether or not the youth experienced suicidal ideation at admission was the independent variable and admission/follow-up depression score the dependent variable. The effects of ideation

and of time upon depression were not significant; only hopelessness score, as a covariate, had a significant effect ($F = 15.15$, $df = 1$, $p = 0.0010$) (Table 5). In addition, two other

- Place Table 5 about here -

repeated measures analyses ($n = 21$) were carried out with numbers of (admission/follow-up) admissions or of attempts per year as the dependent variable, admission ideation as independent variable, and admission/follow-up depression score as covariate. In neither case was there any significant effect.

Finally, an attempt was made to specify elements of hospitalization that might have been associated with the variables of interest. Eighteen students received psychotherapy, 14 family therapy, 13 group therapy, and 10 chemotherapy. There was but one association, however, a result consistent with chance, between whether or not the youths received each of these treatments and our variables of interest (that is, ideation, attempts, depression, hopelessness, and admissions). Thus, we have been unable to detect support for any specific treatment effects.

What can we conclude as a result of these findings? In spite of a small sample and using nonparametric statistics with less power than parametric statistics, we have found histories of less frequent suicidal behavior (that is, ideation and number of attempts per year) at follow-up than (since discharge) at

admission among youthful respondents discharged from the Institute of Living 1 to 4 years previously.

At this point, we do not know the cause of this apparent improvement in youth suicidal behavior. It may be hospitalization, some aspect(s) of hospitalization, or hospitalization in combination with other factors. Until further research is completed with other research designs, however, we cannot rule out either history or maturation effects.

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TABLE 1

BDI Depression Categories: Admission and Follow-up Studies

Depression Category	Study Admission	Follow-up
Normal/Asymptomatic	13.6% (3)	48.0% (12)
Mild/Moderate	36.4% (8)	24.0% (6)
Moderate/Severe	27.3% (6)	16.0% (4)
Extremely Severe	22.7% (5)	12.0% (3)
Missing	---- (3)	---- (0)
Total	100.0 (25)	100.0 (25)

Note: McNemar = 12.333, n = 22, df = 6, p = .0549.

TABLE 2
PRESENCE OF
SUICIDAL IDEATION

ADMISSION		FOLLOWUP YES	FOLLOWUP NO	TOTAL
	YES	15	8	23
	NO	1	0	1
	TOTAL	16	8	24

MC NEMAR = 5.4, df = 1, p = .0196.

TABLE 3
PRESENCE OF
SUICIDAL ATTEMPTS

ADMISSION		FOLLOWUP		
		YES	NO	TOTAL
	YES	2	12	14
	NO	3	7	10
	TOTAL	5	19	24

MC NEMAR = 2.8, df = 1, p = .0956

TABLE 4

OUTPATIENT TREATMENT

ADMISSION		FOLLOWUP YES	NO	TOTAL
	YES	17	1	18
	NO	4	2	6
	TOTAL	21	3	24

MC NEMAR = 1.8, df = 1, p = .18.

TABLE 5

REPEATED MEASURES ANALYSIS OF COVARIANCE

SOURCE	DF	F	Prob
IDEATION	1	0.34	0.568
HOPELESSNESS	1	15.15	0.001
TIME (DEPRESSION)	1	0.05	0.834
DEPRESSION x IDEATION	1	1.02	0.324